

2004 ANNUAL REPORT OF MONTANA'S NONPOINT SOURCE MANAGEMENT PROGRAM

**by
Montana Department of Environmental Quality
Planning, Prevention and Assistance Division
Water Quality Planning Bureau**

MONTANA VISION STATEMENT: Water quality will be restored and protected through the implementation of voluntary best management practices identified in science based, community supported watershed plans.

PART 1. MONTANA NPS PROGRAM OVERVIEW	2
PART 2. NPS GOALS AND STRATEGIES	5
PART 3. IMPLEMENTATION OF NPS OBJECTIVES	13
PART 4. NPS PROGRAM ACTIVITIES	19
PART 5. 319 GRANT PROGRAM OVERVIEW	24
PART 6. TMDL ACCOMPLISHMENTS AND GOALS	26
PART 7. NPS PLANNING FOR 2006	28

NPS HIGHLIGHTS OF THE YEAR 2004

In 2004, the new Water Quality Planning Bureau designated staff to focus on implementation of the Nonpoint Source Pollution Management Plan and approved TMDLs.

EPA approved the 2004 Montana 303(d) List of Impaired Water Bodies on December 23, 2004.

The Montana Department of Environmental Quality continued TMDL/water quality restoration plans on a watershed basis. Water quality restoration plans (including TMDLs) were submitted to EPA for three TMDL planning areas: Blackfoot Headwaters, Swan and Sun. These plans included 27 TMDLs.

Public Comment was received on five draft water quality restoration plans/TMDLs. These plans covered the following TMDL planning areas: Grave Creek, Bobtail Creek, Big Spring Creek, Flathead Headwaters, Ninemile, Bitterroot Headwaters, and Dearborn River.

The Water Quality Monitoring Section finished field sampling of 193 water body segments. Beneficial use support determinations have been completed on 20% of the water body segments on the reassessment list. DEQ initiated the systematic quality assurance review of water quality assessments. The review covers technical and administrative components.

The Board of Environmental Review adopted new classifications and standards for waterbodies that are dry during a significant portion of the year and low flow streams. The EPA worked with the department to develop these standards.

PART 1. MONTANA NPS PROGRAM OVERVIEW

What is Nonpoint Source Water Pollution?

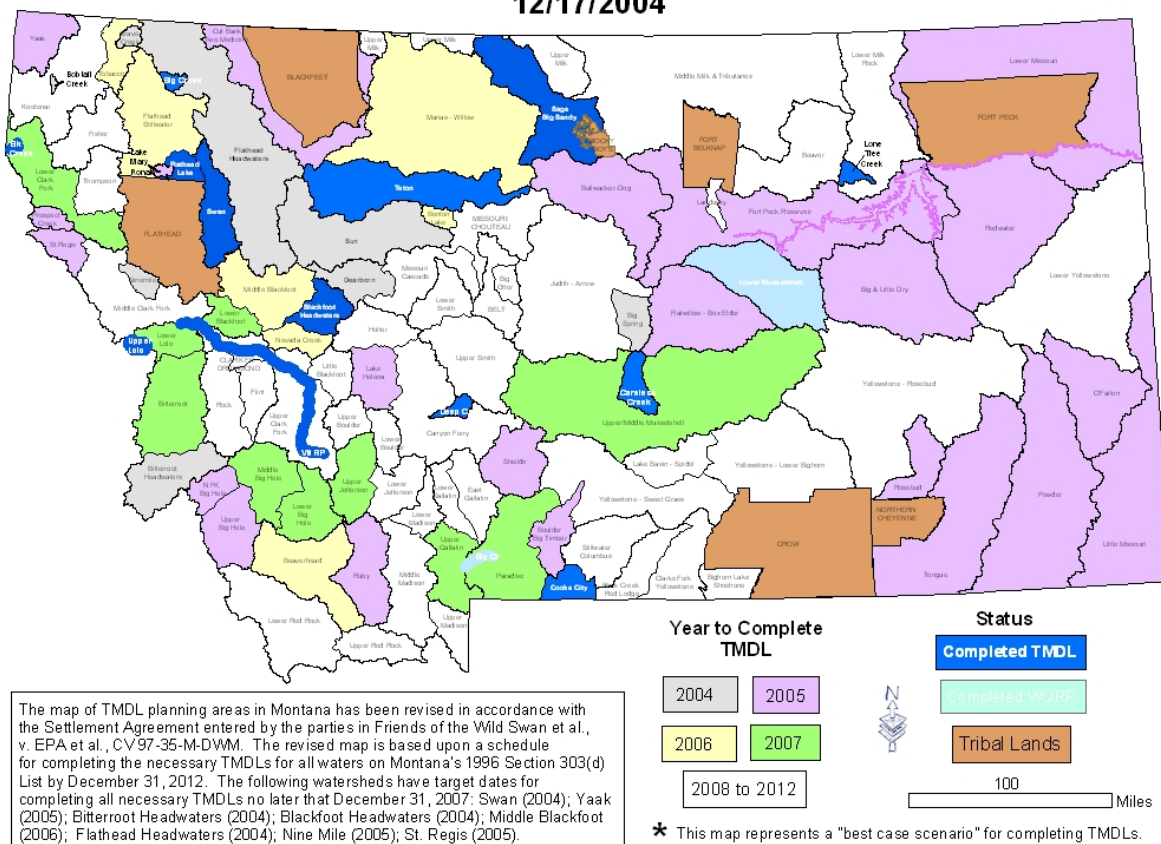
Nonpoint source pollution comes from a variety of activities spread out over a large area. These activities or sources do not require discharge permits. Nonpoint sources include many agriculture and forestry activities, some urban stormwater, as well as small construction projects and abandoned mining areas.

1.1 MONTANA'S NONPOINT SOURCE MANAGEMENT PROGRAM

Section 319 of the Clean Water Act requires states to: 1) assess water bodies for nonpoint source (NPS) impacts, 2) develop nonpoint source management programs, 3) implement those programs, and 4) report on nonpoint source implementation to the public and to the U.S. Environmental Protection Agency (EPA). This report is Montana's 2004 annual report

In 2004 Montana used the watershed approach to prioritize planning for water quality restoration in 100 TMDL planning areas. The TMDL planning schedule fulfills a federal court order that says "all necessary TMDLs" must be completed by 2012. Figure 1 shows the revised Water Quality Restoration and TMDL Planning Schedule submitted on December 18, 2004 to fulfill the court-approved Settlement Agreement.

Figure 1. WATER QUALITY RESTORATION / TMDL PLANNING SCHEDULE *
12/17/2004



EPA approved two watershed plans in 2004. The cooperation and assistance of watershed groups, Conservation Districts and other natural resource agencies, such as the U.S. Forest Service, were crucial to completing the plans.

Table 1 summarizes the pollutants that interfere with the beneficial use of Montana's water.

Table 1 Summary of Pollutants		
Pollutant	Pollutant Concerns/ Sources	Example Solutions
SEDIMENT <i>Size of problem:</i> 218 waterbodies 3,669 stream miles 135,369 lake acres	Concerns: Sediment in streams and lakes is natural, but excess sediment clouds the water and disrupts aquatic life cycles. It reduces the sunlight energy getting to aquatic plants, smothers fish spawning areas, covers food supplies and transports nutrients, pathogens, and heavy metals. Sources: Three example sources of excess sediment are (1) paved areas and roads next to the water body, (2) bare or eroding streambanks and (3) removal of riparian vegetation by logging, grazing or homeowners.	Reduce erosion and sediment by channeling storm runoff away from streets and parking lots to settling ponds. Use best management practices to install and maintain culverts and bridges. Protect streambanks with buffer strips between fields and streams or provide alternate sources of stockwater and shade. Construct roads to channel water away from streams. Restrict use of dirt roads during wet weather.
METALS <i>Size of problem:</i> 198 waterbodies 3,415 stream miles 437,822 lake acres	Concerns: Metals such as arsenic, selenium, mercury, chromium, zinc, lead, copper, and cadmium are toxic to most forms of life. Sources: Metals come primarily from past mining activities. However, airborne mercury can accumulate in waterbodies. Selenium, naturally in soil, can be mobilized by farming practices.	Move mine waste to hazardous waste repositories or cap tailings to reduce erosion. Reduce air pollution levels. Continuous crop soils with high selenium levels.
NUTRIENTS <i>Size of problem:</i> 119 waterbodies 2,881 stream miles 178,049 lake acres	Concerns: Nutrients can wash into streams and lakes causing excess algal growth. Nuisance algae affects swimming and boating, creates foul tastes or odors, and kills fish by reducing the oxygen in the water. Sources: Nutrients are applied to enhance crop production but excess amounts of nitrogen, phosphorus, and potassium can get into our waterbodies. Nutrients are also found in manure, sludge, irrigation return flows, and urban area stormwater.	Implement nutrient management plans to maintain high yields and save money by using only as much fertilizer as the crop needs. Limit the discharge from animal feeding operations by storing and managing wastewater and runoff with an appropriate waste management system. Improve irrigation water management with water conserving methods to reduce return flows. Landscape urban areas with native plants.
TEMPERATURE <i>Size of problem:</i> 54 waterbodies 1,454 stream miles 0 lake acres	Concerns: An increase in water temperature promotes algal growth, decreases oxygen levels, and harms fish. Sources: Water temperatures increase when vegetation that shades a stream is lost, when the channel is widened or dammed and flow is slowed, or when water is diverted and instream flow is decreased.	Plant riparian vegetation to shade the stream. Use water efficiently to reduce withdrawals during the warm summer months. Create wetlands, riparian buffers, parklands and storm water management systems that allow the watershed to slowly release water throughout the summer months.

What are Pollutants? Water pollutants are physical, chemical or biological substances that can be measured in the water. When the amount of the substance exceeds Montana's water quality standards, it becomes a pollutant. Montana has numeric and narrative standards for both human health and aquatic life.

1.2 MONTANA'S 2001 NPS PLAN OBJECTIVES

Many activities completed in 2004 implement the objectives of the Montana Nonpoint Source Management Plan. The plan can be accessed at the DEQ website:
<http://www.deq.state.mt.us/ppa/nonpoint/NonpointPlan.asp>.

The NPS Management Plan's objectives include:

- ◆ Support local conservation activities;
- ◆ Complete comprehensive assessments; and
- ◆ Improve collaboration with other programs, agencies, and organizations.
- ◆ Improve connection between assessment, planning, and implementation.

The creation of the Water Quality Planning Bureau improved the connection between assessment, data management and planning activities at DEQ. To facilitate implementation of the NPS plan, TMDL plans, and MOUs with federal agencies, DEQ has organized a new section to address those activities. Full staffing is still an elusive goal but several positions were filled this year with enthusiastic and knowledgeable people.

PART 2. NPS GOALS AND STRATEGIES

The Nonpoint Source Management Plan contains 13 strategies to achieve the above objectives. Appendix A includes a full listing of the strategies, actions and completion dates.

NPS Agriculture Strategy: *Increase implementation of agriculture best management practices.*

- ◆ In an effort to alert farmers about the Internet address of the AGRIMET website, a short article was placed in the annual NPS newsletter.
- ◆ DEQ participated in the State Technical Committee of the NRCS.
- ◆ Four new 319 projects were funded in 2004 that address agriculture impairments: Dry Creek, Jefferson River, Dupuyer Creek, Muddy Creek and Beaverhead River. These added to the ongoing projects: Beaverhead, Middle Yellowstone, Shields, Teton, Big Muddy and Little Blackfoot, Farm Bureau and Montana Association of Conservation Districts.

The Beaverhead Watershed Committee uses its 319 grant to address impaired streams, threatened fisheries, and point and nonpoint sources of pollution in a Beaverhead Watershed Water Quality Restoration Plan. The plan will be used to educate watershed users on best management practices (BMPs). Willing landowners will implement restoration actions to achieve water quality goals.

Landowners, agencies, local governments, and citizen groups are enthusiastic about tackling the issues found in the Beaverhead watershed. An outreach letter, sent to 250 key landowners, described the purpose, goals, and make up of the Beaverhead Watershed Committee, and invited participation. A public barbeque allowed members of the community to learn about the project from the technical advisors and committee members.



Winter grazing on the Matador in the Beaverhead Watershed

NPS Strategy for Irrigated Agriculture: *Improve irrigation water management and water quality through the increased application of irrigation best management practices.*

The 2004 Montana 303d list identified flow alteration and dewatering as the cause of beneficial use impairment on 200 waterbodies. Both of these causes are often associated with irrigation practices.

Although EPA does not have jurisdiction over impairments classified as “pollution,” the Montana Water Quality Act gives DEQ that responsibility. Pollution includes flow alterations, bank erosion, channel incisement, dewatering, water level fluctuation, and habitat degradation.

- ◆ The National Center for Appropriate Technology (NCAT) completed a NPS 319 project: *A Watershed Approach to Better Irrigation Management*. The project revised and reprinted 7,500 copies of *The Montana Irrigator’s Pocket Guide*. The guide covers irrigation water management and equipment maintenance. It also covers energy conservation, gated pipe, drip irrigation, variable-speed pumps, solar and wind energy applications, soil moisture monitoring, and AgriMet weather stations. The guide generated interest in a national version. Already 30 states have provided input. Publication is expected in spring 2005.



AgriMet Station

- ◆ In its annual newsletter, the DEQ Watershed Management Section publicized the AgriMet automated weather stations. AgriMet is a tool irrigators can use to reduce water use and polluted return flows.

- ◆ The NCAT 319 project also addressed two objectives of the NPS Management Plan: 1) improve irrigation water management and 3) increase application of Best Management Practices (BMPs) for irrigated agriculture.

The Jefferson, Big Hole, and Blackfoot watersheds were targeted. The project helped local watershed groups develop and run their own low cost irrigation management programs. The project also provided a way to reliably monitor irrigation efficiency so that water and energy savings could be quantified.

Each of the three watersheds is experiencing multiple water quality problems affecting fisheries and aquatic life. The causes include dewatering, flow alteration, channel incisement, bank erosion, metals pollution (including lead, mercury, zinc, and copper), nutrient loading, siltation, riparian degradation, fish habitat degradation, algal growth, and thermal modifications. Irrigated crop production is a probable source of impairment in all three watersheds.

In the Big Hole, the Natural Resource Conservation Service committed \$775,000 to help preserve fluvial arctic grayling habitat. The fluvial arctic grayling are only found in a 60-mile stretch of the upper Big Hole River. Due to the drought, flows in the Big Hole River dropped to as low as six cubic feet per second in 2003. Fluvial arctic grayling need at least of 20 cubic feet per second of water for minimal survival levels.

Using the Environmental Quality Incentives Program to provide technical and financial assistance, the landowners within the upper Big Hole River watershed planned and implemented conservation practices that will decrease the amount of water diverted from the river. Fifteen agricultural producers will implement the following practices on 15,848 acres: Irrigation will be shut off during the summer using a staggered schedule and twelve off-site watering facilities will provide an alternative source to watering stock on the Big Hole River. This successful program may soon add three additional landowners.

NPS Strategy for Rangeland: *Increase BMP implementation on rangeland.*

- ◆ DEQ promotes the Rangeland Improvement Loan program of DNRC as a means to install BMPs. <http://www.dnrc.state.mt.us/cardd/cardd.html>



- ◆ DEQ also supports the Montana Rangeland Monitoring Program. This program was developed in 1998 by organizations as diverse as the Montana Stockgrowers, the Montana Wildlife Federation, the Montana Association of State Grazing Districts and Rocky Mountain Elk Foundation.

The program established common terminology and methods for monitoring livestock grazing on rangelands, pastures and forests. The information provides the feedback that ranchers and other land managers need to make adjustments in their grazing management. The goal is to simplify range monitoring and provide consistency so results can be compared on all rangelands. Workshops are offered by MSU to achieve the goals.

Agencies supporting the program include Montana Department of Natural Resources and Conservation, Montana Farm Bureau, Montana Fish, Wildlife and Parks, the Montana Association of Conservation Districts, and the Governor's Rangeland Resource Executive Committee.

NPS Strategy for Habitat Modification: *Protect and restore healthy stream systems that support beneficial uses.*

- ◆ As part of a 319 project, the Bitter Root Water Forum, with the help of the Ravalli County Extension Service, developed and offered a “Living on the Land” training class for landowners. Local information was supplied by the 60-page Citizens Guide titled "Taking Care of the Bitterroot Watershed." General and state information was provided by a presentation that originally was funded by 319 and updated by Montana State University. Other watersheds are encouraged to use this program called Small Acreage—Living on the Land. It is available at: <http://www.animalrangeextension.montana.edu/LoL/home.htm>
- ◆ Education/information efforts such as the Flathead Lakers Critical lands Project, Montana Volunteer Water Monitoring Project and the Middle Clark Fork Watershed Education Network continue to raise public awareness of healthy stream systems.
- ◆ NPS Management staff serve as advisors to the Rangeland Resources Executive Committee. This group advises the governor on issues related to range including healthy riparian resources. In 2004, they sponsored the annual Winter Grazing Seminar. Each year the NPS management program sets up a display reflecting the theme of the seminar.

NPS Strategy for Resource Extraction: *Mitigate damage from past mining activities and protect water quality while developing new resources.*

- ◆ Members of the Board of Environmental Review toured the Upper Blackfoot Mining Complex on July 29, 2004. Lead and zinc were mined from the late 1800s until the late 1950s by a variety of owners. In the late 1980s, the Montana Abandoned Mine Lands program began reclamation. ASARCO assumed responsibility in 1991. The Blackfoot Challenge assisted DEQ in preparing a Water Quality Restoration Plan and has used 319 funds to restore Mike Horse Creek as the reclamation work progressed.
- ◆ DEQ and EPA are working together to produce a Water Quality Restoration Plan for the Tongue, Powder, and Rosebud TMDL planning areas where there are significant coal bed methane resources.
- ◆ Coal bed natural gas (also know as coal bed methane) development is continuing in both Wyoming and Montana. The Bureau of Land Management (BLM) in cooperation with DEQ evaluated projects using the [final version](#) Environmental Impact Statement.

The BLM completed an environmental assessment on Fidelity Corporation's applications to drill 24 federal coal bed natural gas wells in the CX Field near Decker. The project includes infrastructure to carry produced gas and water to existing facilities. The water meeting water quality standards will be put to beneficial use or discharged into the Tongue River as specified in Fidelity's existing water discharge permit issued by DEQ.

BLM and DEQ completed an environmental assessment on the Powder River Gas Company's applications to drill 16 exploratory coal bed natural gas wells. The project will require a water discharge permit from DEQ. The drill sites are 10 miles northeast of Decker, on the west side of the Tongue River. The exploratory project also includes treating the produced water at a central facility before the water is discharged into the Tongue River.



- ◆ The Handbook on Best Management Practices and Mitigation Strategies for Coal Bed Methane in the Montana Portion of the Powder River Basin is available on line at:

<http://www.mdt.state.mt.us/research/projects/env/erosion.shtml>

NPS Forestry Strategy: *Reduce water quality impacts associated with forest practices.*

The Forestry Best Management Practices (BMP) Audit accomplishes five things: (1) determines if BMPs are being applied on timber harvest operations, (2) evaluates the general effectiveness of BMPs in protecting soil and water resources on the specific sites, (3) determines how to implement the Montana Streamside Management Zone (SMZ) law and rules more effectively to protect water quality, (4) determines the focus of future educational efforts, and (5) evaluates and provides information on the need to revise, clarify, or strengthen BMPs.

In 2004, the audit team, coordinated by the Department of Natural Resources and Conservation's Forestry Division, evaluated thirty-nine timber harvest sites on public and private lands. Audit results showed that across all ownerships, BMPs were properly applied 97 percent of the time. Audit results also showed that across all ownerships, BMPs were effective in protecting resources 99 percent of the time. The entire 2004 Forestry BMP Audit Report can be seen at <http://www.dnrc.mt.gov>.

NPS Strategy for Construction: *Reduce water quality impacts of construction activities.*

One of the major environmental impacts of construction can be the degradation of water quality in streams, wetlands, and groundwater near the construction site. The following guidelines found at the website address below can protect valuable water resources.

<http://www.peakstoprairies.org/p2bande/construction/contrguide/section6.cfm>

- ◆ Site preparation and preservation
- ◆ Protect water quality of potable water supplies
- ◆ Water well drilling
- ◆ Stormwater management
- ◆ Construction in natural waterways
- ◆ Discharge of wastewater and sewage disposal

NPS Strategy for Stormwater: Reduce stormwater impacts on water quality.

- ◆ Stormwater is considered in Water Quality Restoration Plans and TMDLs in a variety of ways according to the characteristics of the watershed under study. The Blackfoot Headwaters Sediment TMDL provided an allocation for stormwater permits for a mining complex. It is a performance-based allocation based on erosion control BMPs that address application and maintenance. TMDLs, addressing highway activities to provide safe winter traction, provide performance-based allocations to reduce sediment and salt loading. An example is the Upper Lolo TMDL.
- ◆ Cities with Local Water Quality Protection Districts have active campaigns to reduce urban and residential pollutants that access storm drains. Also universities promote

pollution prevention and education.

http://www.facs.umn.edu/facilities/Energy_Uilities/StormWater.aspx

NPS Strategy for Land Disposal: Address land disposal impacts on a watershed basis.

- ◆ Two databases are available from Montana's Natural Resources Information Services to map the change in septic tank density between 1999 and 2000. An information table can be downloaded for each TMDL planning area showing the number of acres with low, medium and high septic system density. It also shows acres covered by city sewer.
- ◆ Databases also are available for landfill locations, underground storage tanks, and locations of RV dump sites. Landfills are noted as being open or closed.

NPS Strategy for Hydromodification: Mitigate and reduce the impacts of existing hydrologic modifications and assure that new hydromodifications do not impair beneficial uses.

- ◆ Hydromodification is the alteration of stream flow to serve human objectives that can cause NPS pollution and affect aquatic habitats. The pollutants associated with hydromodification include sediment and temperature; however, nutrients and toxics can also be a factor.
- ◆ The Army Corps of Engineers (ACE) completed the final 2004-2005 Annual Operating Plan for the Missouri River that emphasized water conservation. The ability to raise



reservoir levels during the spring fish spawn is dependent on the volume, timing and distribution of runoff. If the drought persists, the ACE will attempt to raise levels in Fort Peck during May and June. Due to low reservoir levels in Ft. Peck, the ACE did not test the effect of a spring rise on fish spawning in the Missouri River below the dam.

NRCS, EPA, and DEQ are working with the Lower Missouri Conservation Districts to assist irrigators in preparing their equipment for the spring rise. Extensive baseline data is being collected on water temperature, sediment and eroding banks.

NPS Strategy for Transportation: Mitigate past transportation impairments and reduce future impacts.

Montana Department of Transportation joined with Washington, Oregon, Idaho, and British Columbia to develop standards for anti-icing products. Tests show that the use of anti-icing chemicals can reduce negative effects to water quality, vegetation, or wildlife.



These findings are based on a three-year study of the roadside environment by the Colorado Department of Transportation. The study compared the environmental effects of magnesium chloride to that of sand and salt. The study found that magnesium chloride does not significantly harm aquatic or plant life. The sand and salt mix is often more damaging to aquatic life -- with the large amounts of silt that washes

into the streams -- and to plant life.

Liquid de-icers or anti-icers are highly diluted when applied and are even more diluted by the snow melt that washes it off the road. The products are difficult to measure just a few feet off the roadway. The products do not add to air pollution and improves air quality when it replaces sand. Sand and salt are ground to powder and blown off the road by traffic. Liquid anti-icers and de-icers have less adverse impact on highway structures, soils, vegetation, and waterbodies than other substances used in winter road maintenance.

The Upper Lolo TMDL assigned a sediment load reduction of 33 percent to the winter maintenance activities on US Highway 12 that affected the West Fork of Lolo Creek. Other TMDLs, such as the North Fork of the Bighole, Lower Redrock, and St Regis, may also assign load reductions for winter maintenance activities.

The Department ran experiments to determine how much traction sand is pushed off the road surface by snow plows and how far it is thrown. The experiment found that most of the sand remained on the road surface. That which left was not thrown more than 20 feet from the road. Snowplow speed was directly correlated to the distance the sand was thrown. This data will be used to estimate sediment loads to streams from this activity.

The Department issued *Recommendations for Winter Traction Materials Management on Roadways Adjacent to Bodies of Water*, which can be found at :

http://www.mdt.state.mt.us/research/docs/research_proj/traction/final_report.pdf

The Maintenance BMPs can be found on the Department's website:

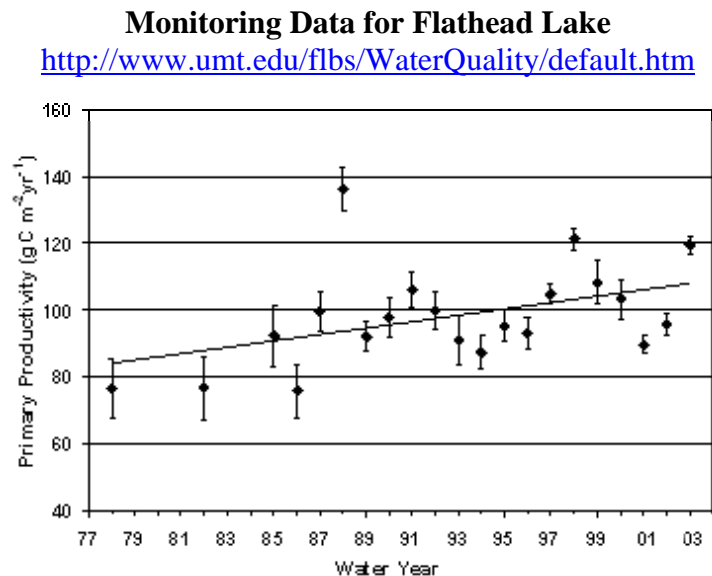
<http://www.mdt.state.mt.us/departments/maintenance/docs/mmanual/sectione.pdf>

The BMPs for Erosion and Sediment Control can be found at:

<http://www.mdt.state.mt.us/research/projects/env/erosion.shtml>

NPS Strategy for Atmospheric Deposition: Develop an effective response to atmospheric deposition.

The Flathead Lake Biological Station monitors water quality in Flathead Lake and its tributaries. Growth of algae (primary productivity) is used to measure water quality in lakes. If the growth of algae is increasing, water quality is declining. The following graph shows a significant increase (solid line) in primary productivity in Flathead Lake.



Declining water quality mainly is due to nutrient pollution in runoff from populated areas and deposition of wind-carried smoke and dust particles on the lake surface. The introduction of nonnative species and operation of the dams are also factors. Flathead Lake is covered by an approved TMDL that addresses the sources of atmospheric deposition. Atmospheric deposition of phosphorous averages 16 percent and nitrogen averages 7 percent of the nutrient load to the lake. The effectiveness of the TMDL will be evaluated in 2006. At this time load allocations will be reevaluated based on new monitoring data.

PART 3. IMPLEMENTATION OF NPS OBJECTIVES

3.1 NPS PROGRAM OBJECTIVES AND 2004 ACTIVITIES

The watershed planning approach provides a coordination tool for DEQ programs. For example, the Source Water Protection Program uses the same planning regions as the TMDL program. The watershed approach increases public understanding and involvement in water quality issues. Citizens who organize on a watershed basis to address weeds or water quantity issues often add water quality issues to their list of concerns. The following program objectives and activities foster cooperation and coordination.

3.1 Watershed Planning Areas

Objective 3.1 (May 2007) Complete restoration plans for every impaired river, lake and stream.

Actions: The watershed restoration plans are complete for the following TMDL Planning Areas: Swan, Cooke City, Big Creek in the Columbia Basin, Upper Lolo, Teton, Flathead Lake, Blackfoot Headwaters, Sage/Big Sandy, Careless Creek, Deep Creek, Elk Creek, Upper Clark Fork River, and Lone Tree Creek. Two other watersheds did not require a TMDL but water quality restoration plans were prepared: Lower Musselshell and Big Creek in the Yellowstone. The Sun Watershed TMDL Planning Area has been submitted for EPA approval.

The 2007 deadline for completion of all necessary TMDLs was extended to 2012. This required both a change to state law, which occurred in the 2003 legislative session; and a negotiated settlement agreement between EPA and five plaintiffs and organizations, which occurred in December 2004.

3.2 Implementation Phase

Objective 3.2 (May 2012) All water quality restoration plans implemented and most beneficial uses restored to rivers, lakes and streams.

Actions: Provided adequate resources are available, the water quality restoration implementation schedule will follow the planning schedule by five years, with the plans approved in 2004 being implemented by 2009.



Several 319 Implementation projects are underway in Muddy Creek, Grave Creek, and Flathead Lake. The Critical Lands Project focuses on the impacts of urban land uses, population growth, and development in unincorporated areas around Flathead Lake. The activities engage landowners along the lakeshore and stream banks, science teachers and students, people recreating on the water, local government officials, and the general public. Projects demonstrate restoration techniques to landowners in the Ashley Creek, Stillwater River and

Flathead River watersheds. A 319 project is presently evaluating the Deep Creek TMDL.

Increased funding, provided through the Farm Bill, covers the Conservation Reserve Program, Environmental Quality Incentives Program, and Conservation Reserve Enhancement Program. The NRCS includes project criteria bonus points for projects proposed in watersheds that have waterbodies on the Montana 303(d) List and those where TMDLs have been developed.

3.3 Funding Clean Water

Objective 3.3 (December 2002) Present Montana Clean Water Fund Proposal to 2003 legislature.

Actions: The Water Activities Work Group is investigating ways to add value to their recommendations concerning 319 funds. The group will suggest other funding sources likely to fund the projects that did not receive 319 support.

3.4 Improving Internal DEQ Coordination

Objective 3.4 (April 2001) DEQ management will designate TMDL development as one of the department's highest priorities. Department management will direct all divisions, bureaus and sections to support and collaborate with the nonpoint program in developing water quality restoration plans and meeting the court-ordered schedule.

Actions: DEQ supported the legislative change that extended the TMDL completion date and participated in the negotiated settlement agreement. The outcome is that all necessary TMDLs will be completed by December 2012.

The Board of Environmental Review amended its classification standards for ditches, ephemeral and low flow streams, in response to requirements of the Environmental Protection Agency (EPA) to protect aquatic life. The action added numeric chronic aquatic life standards and a narrative standard for saline tolerant aquatic life.

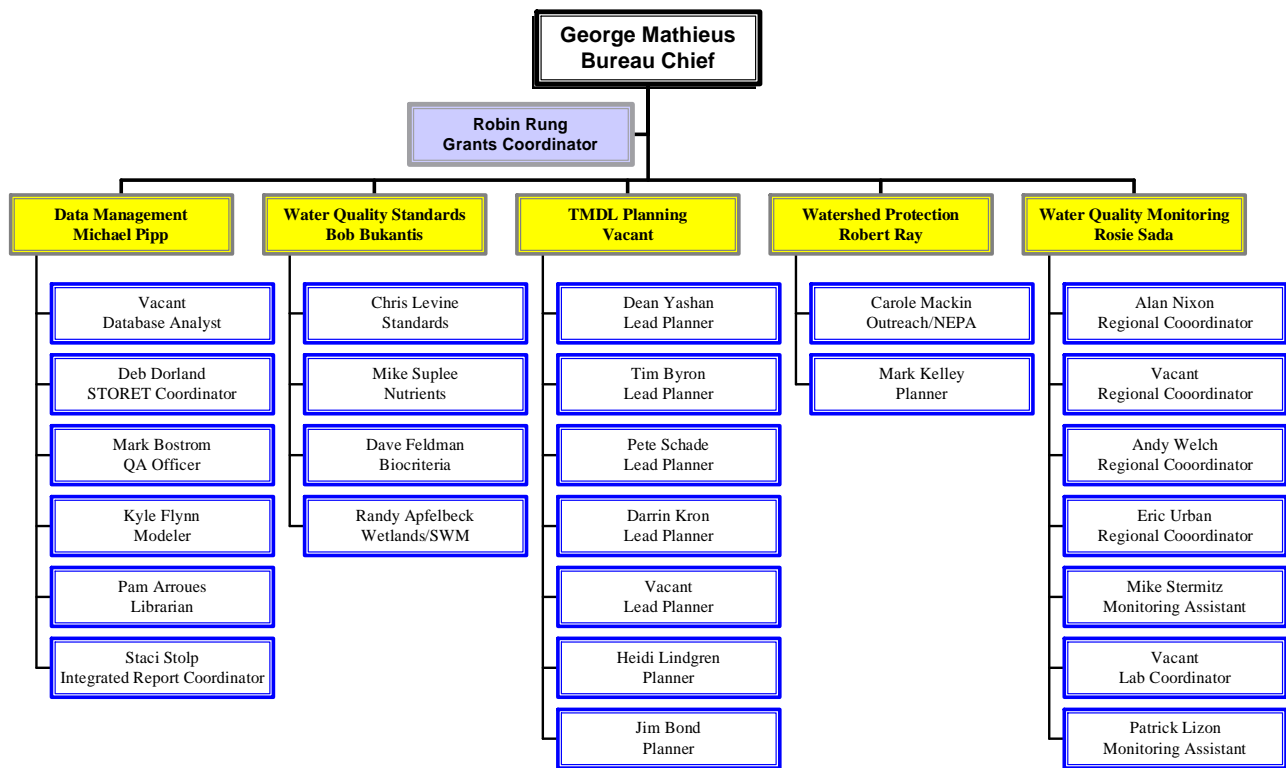
The Board also amended Department Circular WQB-7 (Montana's water quality standards) to indicate the aquatic life standards that are priority pollutants such as toxic metals or non-priority pollutants such as ammonia. The Board also stated that in order to reclassify a waterbody, DEQ must complete and EPA approve a Use Attainability Analysis.

3.5 Improving Internal Coordination

Objective 3.5 (June 2001) Improve coordination between monitoring and planning sections by: a) changing the dual management structure; b) improving management under the existing structure; and/or c) finding suitable office space to bring together staff in the same building.

Actions: The Water Quality Planning Bureau reorganized and moved the Contracts/Grants Officer directly under the Bureau Chief in order to coordinate all contracting functions in the bureau. Also, a new bureau structure was created to implement (1) TMDL planning and (2) the goals of the Nonpoint Source Pollution Program. The new "Watershed Protection Section" will implement approved TMDLs, provide effectiveness monitoring, and coordinate and manage the Nonpoint Source Pollution Program.

Water Quality Planning Bureau



3.6 Improving Intra-agency Communication

Objective 3.6 (June 2001) Watershed Management and Monitoring sections will utilize DEQ Intranet site to update the rest of department on watershed planning activities.

Actions: The DEQ Internet site has been used to provide information on Watershed Plans, 319 grant activities, TMDL plans, and links to other information of interest to the general public and DEQ staff. These activities are now coordinated through trained clerical staff. DEQ's new public relations coordinator has identified staff that provides public information and developed a coordinated approach to provide information via the DEQ Intranet, media and speakers.



RICHARD OPPER IS THE NEW DIRECTOR OF THE MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY. HE SERVED AS THE EXECUTIVE DIRECTOR OF THE MISSOURI RIVER BASIN ASSOCIATION FOR 14 YEARS. THE COMMISSION INCLUDED REPRESENTATIVES FROM THE STATES AND THE INDIAN TRIBES IN THE MISSOURI RIVER BASIN.

3.7 Improving Interagency Coordination, Cooperation and Communication

Objective 3.7.a (July 2001) Work with the Governor and his Cabinet to designate water quality restoration as a high state priority; and to facilitate cooperation in plan development and implementation by other state agencies. Develop Memorandums of Understanding with other state agencies delineating their roles in the TMDL process.

Actions: Staff from DEQ's NPS Management Program and members of the Montana Watershed Coordinator Council (MWCC) met with the Water, Wastewater and Solid Waste Action Coordinating Team (W₂ASACT). W₂ASACT formed in 1982 to enhance their assistance to communities and improve the state's environmental infrastructure. The NPS Management Program may use this model to enhance funding opportunities to achieve its goals.

The NPS and MWCC representatives learned how W₂ASACT monitors the funded projects; provides assistance to local governments, towns, and cities; and coordinates the funding and technical resources from the Departments of Commerce, Natural Resources & Conservation, Environmental Quality, and EPA, Midwest Assistance Program, consultants and engineers.

The strength of W₂ASACT is the uniform funding application, hiring engineers, working with agencies, assuring public safety and health, evaluating community efforts, and emphasizing process –making sure the projects are on track and moving forward at all stages. W₂ASACT developed because no one agency could provide the funding and expertise to complete a project. As more agencies get involved, completing projects becomes easier.

Objective 3.7.b (July 2001) - Revise Memorandums of Understanding with federal resource agencies to include the goals and objectives of the *Unified Federal Policy on Watershed Management* as well as the schedule for completing water quality restoration plans.

Actions: DEQ and the Bureau of Land Management have revised a Memorandum of Understanding. Coordination has been enhanced with the Forest Service who has provided a liaison to DEQ concerning water quality issues on national forest lands.

DEQ and the Forest Service are discussing several different opportunities for Forest Service involvement in addressing potentially impaired waterbodies on lands that it manages. The opportunities include use of 303(d) list category 4(b), additional monitoring to demonstrate beneficial use support, and the use of NEPA documents and other National Forest information in TMDL development.

Objective 3.7.c (May 2001) Develop scoring criteria for use by the Watershed Coordination Council that gives TMDL plan development and implementation highest priority for 319 grants. Work with the council to give priority to projects based on the court-ordered schedule.

Actions: The 2004 319 Grant reviews increased the scoring focus on TMDL planning and implementation. Additional scoring criteria and points were provided for projects that implemented a completed TMDL. In 2004, DEQ allocated 80% of the 319 project funds to TMDL planning projects.

Objective 3.7.d (June 2001) Request that NRCS State Technical Committee give priority to watersheds that have developed water quality restoration plans that show a direct relationship between best management practice application and quantifiable water quality improvement.

Actions: The NRCS has criteria for ranking EQIP and other water quality projects that include bonus points for projects in watersheds with 303(d) listed streams and for activities that implement TMDLs and Water Quality Restoration Plans. DEQ and NRCS continue to explore opportunities to coordinate funding and resources that meet the goals of both agencies.

Objective 3.7.e (December 2001) - Develop Memorandums of Understanding with tribal governments defining roles and responsibilities for developing water quality restoration plans for watersheds with shared jurisdiction.

Actions: A MOU with the Kootenai-Salish Tribe was drafted but not finalized. DEQ has met with staff of the Rocky Boy Water Resources Department, the Blackfoot Environmental Office, and the Ft. Peck Office of Environmental Programs. These contacts served to coordinate activities related to 319 projects and TMDLs.

3.8 Watershed Approach Inventory, Monitoring, Characterization, and Assessment

Objective 3.8 (May 2005) Complete assessments for all TMDL Watershed Planning Areas.

Actions: The Water Quality Monitoring Section finished field sampling of 193 water body segments. Beneficial use support determinations have been completed on 20% of the water body segments on the reassessment list. DEQ initiated the systematic quality assurance review of water quality assessments. The review covers technical and administrative components.

3.9 NPS Protection Strategy

Objective 3.9 (ongoing) Promote water quality protection through newsletter and newspaper articles, brochures, websites, field tours, public presentations and other appropriate means.

Actions: Water quality protection was promoted through the 2004 *Watershed Management* newsletter and numerous public presentations throughout the state.

- ◆ Montana Watercourse produced and distributed an informative brochure on Montana's wetlands. <http://nris.state.mt.us/wis/wetlands/Brochures/wetland1.pdf> Watershed Education Network produced a three part video "Refuge: Urban Wetlands of Missoula. Part 1 covers wetland function, hydrology, hydric soils and plants. Part 2 covers aquatic macroinvertebrates, amphibians and reptiles. Part 3 covers birds, mammals, threats, and future stewards.



- ◆ The Montana Association of Conservation Districts who purchased trailers with a grant from the Bureau of Reclamation organized the Montana Rolling Rivers program. Using a 319 Information and Education grant, they purchased an additional trailer and provide materials and maintenance for the entire fleet.

Sarah Carlson, MACD Director, and Brent Esplin, BOR

- ◆ Training was provided for DEQ program staff based on the NPS Pollution Information and Education Program Conference in Chicago. The training was in five parts: 1) Getting Your Point Across, 2) Speak so the Audience Will Hear You Out, 3) Write so the Audience Can Grasp Your Point, 4) Send so the Public Will Get It on Time, and 5) Working with the Media.
- ◆ DEQ's Nonpoint Source Program actively participates in and sponsors the Montana Watershed Coordination Council. DEQ representatives assist several working groups including Agenda, Water Activities, Wetlands, Recognition, Coordinator's Retreat, Water Quality Monitoring, Outreach and Education.
- ◆ The Web Catalog of Watershed Projects found at <http://water.montana.edu/watersheds/projects/default.asp> lists the publicly funded Montana projects that prevent or mitigate nonpoint source pollution, or restore impaired streams and lakes. The database provides information on more than 500 projects initiated since the early 1990's. Three programs provided funding: the [319 Non-Point Source](#) program (Federal funds administered by the Montana Department of Environmental Quality), the [Future Fisheries](#) program of the Montana Department of Fish, Wildlife and Parks, and the [Environmental Quality Incentives](#) program of the USDA Natural Resources Conservation Service.
- ◆ Under a series of 319 grants, the Montana Watercourse offers tours, trunks, workshops and professional development training for educators. The program helps teachers establish water quality monitoring sites near their school to acquaint students with local waterways and water quality issues. The experience gives students a chance to practice using the scientific method, collecting raw data and interpreting results.

PART 4. NPS PROGRAM ACTIVITIES

4.1 PROGRAM COORDINATION

4.1.1 Interagency Coordination

Inter-agency coordination is promoted through:

The **Statewide TMDL Advisory Group (STAG)** serves as consultants to DEQ. The group is made up of fourteen members appointed by the DEQ director. The members represent the interests of livestock, farming, conservation or environment, recreation, forestry, municipalities, point source dischargers, mining, federal and state trust land management agencies, conservation districts, hydroelectric power, and fishing. They assist in prioritizing planning areas and advise the program on how to respond to changing situations.

The **Montana Watershed Coordination Council (MWCC)**— The Montana Watershed Coordination Council is a statewide information and support network created to advance local watershed work. The coordination council serves as a forum for and link between local watershed groups that need assistance in enhancing, conserving and protecting natural resources and sustaining the high quality of life in Montana for present and future generations. It also serves as a statewide network coordinating Montana's natural resource agencies and private organizations in order to share resources, identify and capitalize on opportunities for collaboration, and avoid duplication of efforts. DEQ is an active participant and sponsor of the MWCC. DEQ representatives serve on several MWCC working groups including Agenda, Funding, Wetlands, Recognition, Coordinator's Retreat, Water Activities, Water Quality Monitoring, and Outreach and Education.

The Montana Watershed Coordination Council hosted the second Montana Watershed Symposium, Opportunities for Communities and Landscapes. The symposium drew a diverse group of people interested in using the watershed approach to solve water problems and maximize the effectiveness of scarce resources. Among the 240 attending were watershed coordinators and consultants, Conservation District administrators and supervisors, agency professionals, local and state government officials, and those involved in watershed groups from Montana, North Dakota, Nebraska, Canada, Colorado, Wyoming and Idaho. Their recommendations and evaluations will shape the next symposium.

What benefits or needs would be met by a second statewide gathering?

- Defining a future vision for the role of watersheds in Montana
- Promoting community participation.
- Sharing ideas on the challenges of urbanizing watersheds
- Promoting better stewardship
- Telling the story of the good work local groups are doing.

What issues, topics, training, speakers, or tools would you like to include?

- Roles and responsibilities of agencies
- Learning from one another
- Stories of successful efforts and why they worked.
- Developing a work plan
- Thinking Like a Watershed
- Provide time to network
- Self-evaluation methods for watershed work

- Best communication practices of a successful team

The Water Activities Work Group has provided DEQ with valuable technical support for the past ten years by reviewing Section 319 NPS proposals. This review results in recommendations to DEQ for NPS funding.

The Linking Work Group merged with the Information and Education Work Group. The new Outreach and Education Work Group funds and maintains an excellent web page for the Council: <http://water.montana.edu/watersheds/default.asp>

Federal Agency Coordination and Consistency Review ---DEQ and federal natural resource agencies have operated for almost 15 years under various Memoranda of Understanding and similar coordination and technical assistance agreements. The closest coordination is with the Forest Service who provides a liaison to DEQ concerning water quality issues on national forest lands.

In 2004, the draft Framework for Incorporating The Aquatic and Riparian Habitat Component of the Interior Columbia Basin Strategy into BLM and Forest Service Plan revisions addressed the NPS program in the following six components:

- Riparian Conservation Areas that contain riparian-dependent resources and receive management emphasis
- Habitat for listed or proposed species that is protected by achieving or maintaining the riparian and aquatic values
- Multiscale analysis that evaluates existing conditions, factors limiting aquatic species populations, resource risks, management needs, and restoration opportunities
- Restoration priorities and guidance plans that identify restoration objectives, desired conditions, and identify the types of management actions that will achieve objectives
- Management Direction that describes the desired condition including water quality, habitat elements, channel condition and dynamics, flow/hydrology, and riparian vegetation.
- Monitoring/adaptive management is outcome-based management that relies on monitoring for its success.

4.2 WATER QUALITY ASSESSMENTS

The Nonpoint Source (NPS) Program participates in and uses several types of assessments to evaluate watershed conditions. Assessments are used to fulfill CWA requirements, determine status of the resource, identify remediation needs, and set program priorities. Each type of assessment has a unique set of guidelines and endpoints. A list of the assessments is briefly discussed below.

Assessments Completed Primarily in a Statewide Forum: DEQ participates in assessments sponsored by the Montana Watershed Coordination Council (MWCC) and watershed groups. The EQIP project prioritization is an example of a collaborative assessment activity. In addition, the MWCC discusses activities in a different major river basin each calendar quarter.

Assessments Completed Primarily to Support DEQ Programs: DEQ uses an assessment process to develop the 303(d) list of impaired waterbodies. The process is based on the Montana Water Quality Act, Section 75-5-702. The 303(d) list was updated and approved by EPA. in 2004. DEQ's written protocol analyzes all relevant data to determine, first, if the data is sufficient and credible and, second, whether or not a waterbody supports the beneficial uses of

the water. DEQ produces the 305(b) Assessment document that is a report to Montana and Congress on the status of the state's water bodies every two years. This report contains the 303(d) list. In addition:

- ◆ DEQ has a State Source Water Assessment Plan that describes the statewide strategy for implementing the drinking water supply assessment and protection program.
- ◆ The State Revolving Fund conducts a NPS and point source needs assessment to identify where loans are most needed and appropriate for funding.
- ◆ The Wetlands Program identifies wetlands and provides assessment data to the National Wetlands Inventory. This program also assesses wetlands to identify Unique Wetland Habitats for the Heritage Program.
- ◆ The Remediation Division's Abandoned Mine Cleanup Program has identified and prioritized abandoned mines for cleanup.



- ◆ A private landowner can apply for Environmental Quality Incentives Program (EQIP) funding from the Natural Resources Conservation Service (NRCS) to reestablish a native wetland complex.

4.3 INFORMATION MANAGEMENT SYSTEMS

The Internet and e-mail provides a fast and inexpensive way to share information and comments with citizens. The Montana Watercourse maintains and operates a listserve of people interested in Montana's watersheds. Sign up at: <http://water.montana.edu/watersheds/mwcc/listserv.asp>

The Natural Resource Information Service maintains and updates a web-based GIS application for watershed planning and TMDL information. It includes on-line tutorials and help screens. NRIS provides training on TMDL applications for users such as conservation districts, watershed groups, and other resource agencies: <http://nr.is.state.mt.us/mapper/>

A related web page at the Montana Water Center includes access to announcements, watershed contacts, a calendar of events (workshops and meetings), project photographs, and training materials. The center maintains and updates the database of watershed projects. The database is available online at the <http://water.montana.edu/watersheds/projects/default.asp>

4.4 MONTANA STATEWIDE MONITORING

Monitoring water quality conditions in a state as large as Montana is a challenge. The state has over 175,000 miles of rivers and streams, 10,000 lakes covering nearly a million acres, and about 840,000 acres of wetlands. DEQ, in coordination with the US Geological Survey (USGS), has

collected six years of water quality monitoring data. Biological data has been collected for four years. The statewide monitoring plan includes fixed stations and reference sites, and stream assessments.

Fixed Stations

Fixed station monitoring determines statewide water quality status and trends. Thirty-eight fixed station sites are located at active USGS flow gauging stations. Monitoring includes four water column samples collected each year in the spring during the rising, peak and falling limbs of the runoff portion of the annual hydrographs as well as during the late summer to characterize base flow. The water is tested for total suspended sediment, nutrients, metals, common ions, pH, temperature, and conductivity.

The USGS is preparing a final report on their results. The report will be available in 2005. Due to limited funding, the fixed station monitoring will not continue in 2005.

Reference Sites

An objective of monitoring reference sites is to understand the range of normal conditions found in a water body that supports all the beneficial uses of the water. DEQ hopes to sample each ecoregion: Northern Rockies, Montana Valley and Foothill Prairies, Middle Rockies, Canadian Rockies, Northwestern Glaciated Plains, and Northwestern Great Plains. DEQ works with local groups and agencies to identify sites where only minimal human activity has occurred.

Stream Reach Assessments

Targeted stream reach assessments identify stream segments that belong on the 303(d) list because they are impaired and require restoration plans. DEQ collects chemical and biological data, and assesses stream habitat using pebble counts, photo points, geomorphic measurements and evaluation of riparian vegetation. These assessments are described in the Montana 2004 303(d) List.

The Water Quality Monitoring Work Group (WQMWG) of the Montana Watershed Coordination Council (MWCC) makes recommendations on improving coordination and monitoring effectiveness. The number of stream reach assessments conducted each year depends on available funding and resources.

DEQ's Monitoring Section gathers data on water quality conditions and trends, interprets it, and makes it available to resource managers and the public. Monitoring provides the "feedback loop" to let managers and citizens know how well pollution control programs are working, identifies emerging problems before they become critical and evaluates cumulative effects. Public awareness of issues, trends, and conditions is essential for public support of management actions or for taking no action when none is warranted.

Montana initiated a quality assurance quality control program designed to assure that all environmental measurements conducted by contractors, state and local agencies provide DEQ and EPA with data of known quality and reproducibility. This requires that anyone collecting data for DEQ will complete a Quality Assurance Project Plan (QAPP). The plan lists the locations of the samples to be taken, specifies how the samples will be handled and preserved, and lists the methods for reporting raw data and analyzing results.

Monitoring of Wetland Mitigation Sites

Montana Department of Transportation assessed 23 wetland mitigation sites and reported its findings in March 2004. Monitoring included wetland delineation, mapping of vegetation and wetland/open water boundaries, soils and hydrology data, and wildlife and macroinvertebrate data.

PART 5. 319 GRANT PROGRAM OVERVIEW

5.1 FUNDING CLEAN WATER

Most of Montana's Nonpoint Source (NPS) program budget comes from the federal government. Section 319 funds pay 60 percent of project grants and DEQ's NPS program cost. During the 2004 grant cycle, DEQ received proposals totaling \$4.7 million dollars. The DEQ awarded \$1,845,000 to 19 watershed projects and 4 information and education projects.

Project Name	Project Sponsor	319 Funds
Big / Little Dry Creek TMDL Planning	Garfield County CD	\$10,525.00
Lolo Watershed TMDL-Phase I	Montana Trout	\$30,001.00
Beaverhead River Watershed Monitoring Phase II	Beaverhead County CD	\$78,600.00
Bitterroot Mainstem TMDL Planning	TriState Water Quality Council	\$39,878.00
Jefferson River Watershed Project Phase II	Jefferson Valley CD	\$35,000.00
Strategic Assessment and Planning in the Big Hole Watershed for TMDL Development	Big Hole River Foundation	\$48,000.00
Prospect and LCF TMDL Plan Development	Green Mountain CD	\$84,700.00
Tobacco Watershed TMDL Development	Kootenai River Network	\$90,432.00
Nevada/Lower Blackfoot TMDL Planning	Blackfoot Challenge	\$105,500.00
SCMW Water Quality Restoration Plan	Park County CD	\$75,000.00
Redwater River Education Project	McCone County CD	\$9,680.00
Marias/Bullhead TDS Ground-Water Assessment Project	Liberty County CD	\$100,000.00
FPIP Watershed Restoration, Phase 1	Fort Peck Water Users Association	\$20,000.00
Phase 1 Hydrogeologic Evaluation of the Alluvial Valleys of Stillwater County	Stillwater County CD	\$130,000.00
Lower Missouri Information & Education Project	Roosevelt County CD	\$33,760.00
Muddy Creek Water Quality Improvement Project	Cascade County CD	\$80,000.00
Grave - Therriault Creeks Restoration Project	Kootenai River Network	\$70,800.00
Dupuyer Creek Watershed Project	Pondera County CD	\$45,600.00
Dry Creek Water Quality Improvements – Phase II	Broadwater County CD	\$10,000.00
Marias River Watershed Project – Phase 1A	Toole County CD	\$32,600.00
Water Quality Education and Monitoring	Montana Watercoarse	\$146,574.00
Critical Lands Project	Flathead Lakers	\$30,350.00
DEQ/EPA Contracted Services Project	Montana DEQ	\$538,000.00

It is the objective of the NPS program to have contracts in place by April 30. In 2004, this goal was missed by several weeks. But all contracts were in place by June 30 in time for obligating state contractual funds. In 2004, DEQ closed out Staffing and Support Grants for fiscal year 2001 – 2003 and the DEQ Projects Grant for 1997.

The NPS program has adopted the tools described below to efficiently account for funds expended and expedite payment of bills.

Attachment B-- DEQ provides NPS project sponsors with a spreadsheet-billing form called Attachment B. It is part of the contract. The Excel format reduces math errors, shows cumulative totals by project task, and organizes match reporting for contractors. In both the billing and match reporting sheets, a contract to date figure is displayed advising of payments made and balances remaining.

Financial Status Reports — DEQ Financial Services completes Financial Status Reports each year. The reports provide an annual check on the total grant expenditures and match funds reported for each grant. These reports help ensure that funds are effectively tracked.

Grant Reporting and Tracking System (GRTS)— The GRTS system provides Montana with a consistent way to report on the status of nonpoint source grants. DEQ has a fully trained administrative staff member to input GRTS information provided by project sponsors. Montana requires that quarterly and final reports for all 319-project grants be in electronic format to facilitate data entry into GRTS. The final project reports were attached to each project evaluation prior to closing the 1997 319 Projects Grant. The Water Quality Planning Bureau Contract / Grants Officer is the DEQ NPS GRTS representative. The Contracts/Grants Officer attended the National GRTS meeting in San Francisco in March and the Region 8 Training in January of 2004.

Contract Administration Training – Back To Basics – DEQ in cooperation with the Big Sky Public Purchasing Association and the Montana Association of Conservation Districts offered a 3-day training entitled Contract Administration – Back to Basics. The training took place in Bozeman on October 13 – 15, 2004. Over 90 participants attended who either have current 319 contracts or are from state agencies that collaborate on watershed projects. The featured speakers were Julie DalSoglio, EPA Montana Project Officer; Danette Quick, EPA Montana Office Grants Specialist; Sheryl Olson, Montana State Procurement Bureau Chief; Jan Fontaine, MACD Accountant; Ken Phillips, Montana Fish, Wildlife & Park Environmental Engineer / Project Manager; Kurt Alme, US Attorney's Office-Billings, Montana; Bill Kennedy, US Department of Homeland Security-Butte, Montana; Sandra Boggs, DEQ Fiscal Specialist and Vicky Van Swearingen, DEQ Fiscal Contracts Manager.

Performance Audits/Administrative Reviews – The Contracts/Grants Officer conducts four performance audits/administrative reviews of 319 project sponsors annually. Started in 2004 this activity addresses inconsistencies identified by DEQ amongst project operations, reporting systems, fiscal tracking and overall project management. DEQ completed the Flathead Basin Performance Audit/Administrative Review. Since there were three project sponsors and a total of ten active contracts, this audit accounted for 2 audits. Inconsistencies in how the 319 funds were used resulted in a re-direction of five grants to focus more on the Flathead Basin TMDL activities. The Marias Watershed audit/review uncovered minor inconsistencies between active contracts and identified over \$50,000 that was going toward non-TMDL activities. Contract funds were redirected to tasks meeting program objectives. The fourth audit/review concerned the Pondera County Conservation District and identified organization deficiencies that are currently being corrected by the conservation district. Overall, the project sponsors view the audit/reviews favorably and 7 current grantees have requested audits.

PART 6. TMDL ACCOMPLISHMENTS AND GOALS

6.1 WATERSHED PLANNING AREAS AND SCHEDULE

Montana's schedule for TMDL development was revised in accordance with the Settlement Agreement entered by the parties in *Friends of the Wild Swan et al., v. EPA et al.*, CV 97-35-M-DWM. The revised map, shown in Figure 1, is based on a schedule for completing the necessary TMDLs for all waters on Montana's 1996 Section 303(d) List by December 31, 2012. Eight watersheds have specific target dates for completing all necessary TMDLs no later than December 31, 2007. They are the Swan in 2004, Yaak in 2005, Bitterroot Headwaters in 2004, Blackfoot Headwaters in 2004, Middle Blackfoot in 2006, Flathead Headwaters in 2004, Nine Mile in 2005, and St. Regis in 2005.

The department has divided the state into 102 watershed planning areas. The schedule extends to 2012. However, the areas scheduled between 2008 and 2012 have not been prioritized. The planning areas generally correspond to eight and eleven digit U.S. Geological Survey hydrologic unit codes (HUCs). Areas of similar land use and water quality problems were grouped together. DEQ chose to use planning areas to promote a watershed approach and to have planning areas correspond to the areas addressed by existing watershed groups. This makes it easier for the groups to participate in TMDL or watershed plan development.

Swan Lake Watershed TMDL Planning Area



EPA approved water quality restoration plan and TMDLs for the Swan and the Upper Blackfoot planning areas in 2004. The Swan Lake Watershed is found in Lake and Missoula counties north of Missoula and east of the Mission Mountains. The TMDLs addressed nutrient loading to Swan Lake and sediment loading to two tributaries to the Swan River, Goat and Jim creeks.

Excess nutrient loading and low levels of dissolved oxygen in the bottom waters of Swan Lake impair the water quality. Optimum fish

habitat in Jim Creek is reduced by the lack of large woody debris and by fine sediment that reduces successful fish spawning. Goat Creek is impaired by high levels of suspended sediment. The activities contributing to the problems are timber harvest, private lakeside development, associated roads and septic systems.



The Goat Creek TMDL is a 33% reduction in suspended sediment during peak runoff. The Jim Creek TMDL is a 10% reduction in fine sediment in gravels where fish spawn. The Swan Lake TMDL calls for no increase in particulate organic carbon and nutrients. These substances have a direct effect on oxygen levels in the lower levels of the lake and can

eventually affect overall water quality in the lake.

The Department of Environmental Quality, in cooperation with the Blackfoot Challenge, completed a water quality and habitat restoration plan for the Blackfoot Headwaters TMDL Planning Area. The plan consists of two documents: one addresses metals contamination and the other, sediment. The plan also contains a general plan to improve and maintain water quality throughout the basin.

The sediment impairing the streams of the planning area comes from road runoff, sanding for traffic safety, and eroding stream banks and upland areas. The metals impairing the streams come primarily from historic mining operations.

In general, the TMDL targets for metals are the Montana numeric water quality standards. The TMDL targets for sediment vary and reflect current conditions, beneficial uses, and habitat restoration goals for each impaired segment. Additional targets were set to address degraded habitat, barriers to fish migration, biological communities and fine sediment in the stream bed. There are stream-specific targets to reestablish riparian cover and channel width-depth ratios.

An example of a specific sediment TMDL is a 30% reduction in the sediment load from roads and a 75% reduction from bank erosion caused by human activity. For road sanding, appropriate best management practices (BMP) are suggested to reduce sediment loading. Land use indicators are compared to determine if activities are increasing water yield and hillslope erosion. An example of a specific metal TMDL target value for lead is 5.3 micrograms per liter during low flow, which reduces current lead concentrations by 94%.

The following website summarizes information on all approved water quality plans and TMDLs <http://www.deq.state.mt.us/wqinfo/TMDL/TMDLsApprovedMtNonpointOnly.htm>.

6.2 CREATING EFFECTIVE WATERSHED PARTNERS

There are about 70 watershed groups in Montana. Each watershed group reflects the unique set of land and water uses in the area. DEQ consults with many watershed groups and conservation districts at critical decision points in water quality restoration planning. DEQ requests the participation of farmers, ranchers, environmentalists and recreationists, as well as representatives of DNRC, the Forest Service, Bureau of Land Management, municipalities and the forest, mining and tourism industries.

Watershed groups often focus on particular problems associated with a lake or stream. Some groups have expanded their focus to coincide with DEQ's TMDL watershed planning areas. Other groups concentrate on sub-watersheds. A few focus on larger areas but confine their attentions to specific problems. Several groups list their activities on the Montana Watershed Webpage: <http://water.montana.edu/watersheds/groups/default.asp>

Conservation districts often take the lead in organizing watershed projects. Conservation districts often serve as fiscal and administrative agents for 319 grants. In order to improve communication and collaboration, DEQ staff attended the state convention of the Montana Association of Conservation Districts. A display described the 319 funding grant program.

Where there are effective watershed groups there are often notable improvements to water quality. Effective groups:

- ◆ represent a broad cross section of the community including the water users and land managers whose decisions affect water quality as well as the people who value the water bodies for recreation, water supply or other uses;
- ◆ are open to participation, input and ideas;
- ◆ facilitate effective communication (speaking and listening);
- ◆ identify and address issues;
- ◆ seek out appropriate technical expertise;
- ◆ develop solutions that others in the community will accept;
- ◆ achieve agreement, encourage citizens to take voluntary measures to restore and protect water quality;
- ◆ Provide direction and continuity;
- ◆ incorporate water quality restoration and protection into the community ethic.

In 2004 DEQ watershed planners met with several new groups to discuss local involvement in the TMDL planning process. One group on the Upper Yellowstone is active in water quantity and weed issues. They are considering expanding their area of interest to water quality and endangered species. The Bobtail Creek Watershed Group partnered with DEQ in completing the Bobtail. The group was effective in organizing landowners to cooperatively plant riparian vegetation and build fences. Initial meetings with various groups on the Clark Fork River may be a catalyst to form a group to address water quality restoration. Previously these groups have focused on Superfund issues and groundwater protection.

New funding and grant opportunities at NRCS will help watershed groups and conservation districts organize and complete key projects. MACD administers the Local Empowerment Program (LEP) in Montana. A LEP Committee will review grant applications. Each grant will be no more than \$50,000 and twenty percent of the available grant funding must be spent on demonstration projects.

PART 7. NPS PLANNING FOR 2006

7.1 INFORMATION AND EDUCATION PROGRAM (I&E)

7.1.1 Summarizing the I&E Program in the 2001 NPS Management Plan

The 2001 NPS Management Plan does not separate out I&E objectives in one area. Instead the I&E objectives are interspersed throughout the plan. The following summary identifies the I&E components of the 2001 NPS Management Plan.

Increase public awareness of Nonpoint Source pollution -- how it affects people's health and quality of life

- ◆ provide speakers, displays and handouts for meetings and training events;
- ◆ publicize local watershed activities and provide a calendar of events;
- ◆ link people with similar water quality concerns via websites, list serves, newsletters, brochures, symposia, etc.;
- ◆ assess the need for additional I&E materials, evaluate the audience, use focus groups to design materials, create materials for appropriate media, and distribute materials to target audiences; and
- ◆ publicize and promote the projects funded by the 319 program; and
- ◆ partner with existing organizations to deliver the NPS I&E program.

Increase public understanding and access to site-specific information on surface and ground water

- ◆ assist in forming citizen advisory groups in TMDL planning areas;
- ◆ inform TMDL citizen advisory groups about economic, ecological, and health consequences of water pollution; the benefits of preventing water pollution; and water conservation practices;
- ◆ provide information and training on water quality monitoring; and
- ◆ compile watershed planning and management activities into a database and make the information easily available to the public;

Technical Assistance, Training, and Action:

- ◆ disseminate information about cost-effective BMPs; and provide training on implementing BMPs;
- ◆ provide updated watershed information that is easily available to show the success of watershed strategies and BMPs;
- ◆ coordinate with the Montana Watershed Coordinating Council's work groups
- ◆ provide technical support and training for educators to enhance student awareness and understanding of NPS issues.

7.1.2 Strengthening the NPS Information and Education Program in 2006

Successful implementation of the 2006 NPS Management Plan will depend on voluntary actions to address restoration and protection of Montana's streams, lakes and groundwater. Because implementation is voluntary, an effective Information and Education Program is essential.

Planning meetings were held in Missoula, Helena and Bozeman to gather comments from experienced staff of watershed efforts. They were asked to identify the best actions to improve the effectiveness of the I&E program. Nine I&E components were identified.

- ◆ Simplify and distribute information about watersheds and government policies

- ◆ Provide information on emerging issues
- ◆ Provide learning sites around the state
- ◆ Empower local groups to carry out I&E activities
- ◆ Provide regional perspective in I&E materials
- ◆ Focus on high school students
- ◆ Target audience and tailor materials to maximize behavior change
- ◆ Provide training and information about Best Management Practices for Managing Riparian Areas, Floodplains and Groundwater.
- ◆ Provide a way to evaluate the success of the I&E Program

These recommendations indicate a need for information that is relevant and easily understood. The nine components will be guides for developing goals and objectives for the I&E Program.